AP Statistics NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_DATE: \_\_\_\_\_\_\_\_\_

Ch. 17 Classwork

1. A scientist concerned with the deadly disease mycobacteriosis (found in rockfish in the Chesapeake Bay waters) knows that 19% of rockfish have the disease. Suppose a charter boat takes a group of armature anglers out for a tour of the Chesapeake Bay. They catch 24 from different parts of the bay.
   1. What is the probability that none of the fish have the disease?
   2. What is the probability that they find one with the disease among the first 7 fish?
   3. What is the probability that the first one with the disease is the 4th **or** 5th fish caught?
   4. What is the probability that at least two have the disease?
   5. What is the probability that no more than 3 have the disease?
   6. How many should they expect to have the disease?
   7. How many fish would they need to catch before they found one with the disease?
2. Willy Wonka is trying a new promotion to sell Wonka Bars. Out of a 200,000 Wonka Bars produced 12,000 randomly selected bars will have a prize that gives the owner a free box of Nerds.
   1. What is the probability that there is a prize within the first 7 bars you eat?
   2. What is the probability that there isn’t a prize in 12 bars you eat?
   3. What is the probability that in 8 bars there is 3 prizes?
   4. What is the probability that there are at least 4 prizes out of 10 bars?
   5. What is the probability that there is at least one prize in 12 bars?
   6. How many bars would you expect to eat before finding a prize?
   7. If you were to buy a case of 250 Wonka bars, how many would you expect to have the prizes? With what standard deviation?
   8. What would be the probability that of the 250 Wonka bars there would be less than 10 with prizes?